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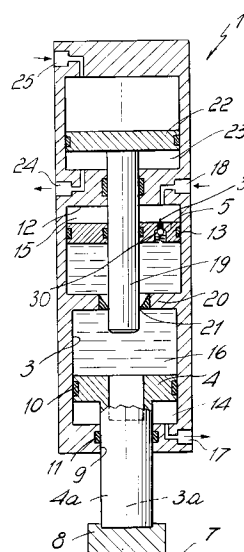
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**16**  
**I-20123 Milano(IT)**(54) **Combined pneumatic-hydraulic press head with high actuation speed.**

(57) The combined pneumatic-hydraulic press head (1) includes a body (2) inside which a substantially cylindrical main chamber (3) is defined; the chamber (3) accommodates a main piston (4) and a secondary piston (5) so that they can slide along an axial direction (3a). The main piston (4) has a stem (4a) which protrudes from an axial end (6) of the main chamber (3), and the secondary piston (5) is spaced from the main piston (4) on the side opposite to the stem (4a). The two pistons (4,5) sealingly divide the main chamber (3) into three chambers: two end chambers (14,15), which can be connected to a source of compressed air or to the atmosphere in order to move the two pistons (4,5) along the axis (3a) of the main chamber (3) during the approach of the main stem (4a) or spacing motion with respect to the part to be treated (8), and an intermediate chamber (16) which contains a liquid. An actuation stem (19) is furthermore accommodated in the main chamber (3) and sealingly passes through the secondary piston (5). A partition (20) is arranged in the intermediate chamber (16), is rigidly fixed to the walls of the main chamber and is crossed by a passage (21) for the actuation stem (19). The press is actuated by pushing the actuation stem (19)

through the passage (21) toward the main piston (4) so as to increase the pressure in the region of the intermediate chamber (16) which is located between the main piston (4) and the partition (20).

*Fig. 3***EP 0 507 070 A3**



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## EUROPEAN SEARCH REPORT

Application Number

EP 92 10 3073

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
X	EP-A-0 355 780 (E. RAPP)  * column 9, line 53 - column 10, line 25; figures *	1, 4-9, 14-15	B30B1/32
Y		2-3, 10-13	
X	DE-A-2 017 007 (K. GEISEL)  * claims; figure *	1, 4-9, 14-15	
X	FR-A-2 384 977 (STOREN- UND MASCHINENFABRIK EMIL SCHENKER AG) * figure 1 *	1, 5-9, 14-15	
X	GB-A-2 175 648 (G. SMEETS) * figures *	1	
X	US-A-4 961 317 (M. WOLFBAUER) * column 10, line 5 - column 11, line 8; figures *	1, 10	
Y	EP-A-0 023 030 (E. RAPP) * the whole document *	10-13	TECHNICAL FIELDS SEARCHED (Int. Cl.5)
Y	FR-A-995 204 (ALLMÄNNA SVENSKA ELEKTRISKA AKTIEBOLAGET) * the whole document *	2-3	B30B F15B
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 08 OCTOBER 1992	Examiner VOUTSADOPOULOS K.
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